Applicant respectfully requests reconsideration of this application. Claims 1-44 are currently pending.

Claims 1, 2, 4, 9-11, 15, 18-21, 23, 28-30, 34, 37-40, 42, and 44 have been amended. No claims have been cancelled or added.

Therefore, claims 1-44 are now presented for examination.

Claim Objections

The Examiner has objected to Claim 2-5 because of the error in claim 2, which referred to "the the time instance".

Claim 2 has been amended to remove the error, referring to "the time instance".

Claim Rejection under 35 U.S.C. §103

Onvural et al. in view of Lorek et al. and Kato et al.

The Examiner rejected claims 1-44 under 35 U.S.C. §103(a) as being unpatentable over U.S Patent No. 5,995,570 of Onvural et al. ("*Onvural*") in view of U.S Patent No. 7,206,327 of Lorek et al., ("*Lorek*") and in further view of U.S. Patent Publication No. 2005/0036763 of Kato et al., ("*Kato*").

Claim 1, amended herein, is as follows:

> 1.   A method of end-to-end clock recovery for media streaming, comprising:
>
> receiving a data packet at a media access controller (MAC) of a network adapter, the data packet being a part of a streaming media application;

inspecting the data packet using a packet match filter to determine a protocol type of the data packet and a location of a timestamp field in the data packet containing an original timestamp; and

if the data packet matches a pre-determined protocol type:

generating a new transmit timestamp for the data packet in real-time, the new transmit timestamp being generated at the time of transmission of the data packet by the packet match filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter;

switching a connection of a physical layer (PHY) from the MAC to the snapshot register using a data switch and inserting the new transmit timestamp from the snapshot register into the timestamp field of the data packet in place of the original timestamp for the data packet;

switching the connection of the PHY back to the MAC to enable a remaining portion of the data packet; and

transmitting the data packet over a network to a receiver.

Claim 1 and the remaining claims have been amended pursuant to, for example, the structure illustrated in figures 4 and 6 of the application.

With regard to claim 1, among other differences, it is submitted that the combination of references does not teach or suggest inspecting a data packet using a packet match filter to determine a protocol type of the data packet and a location of a timestamp field in the data packet containing an original timestamp, or generating a new transmit timestamp for the data packet in real-time, the new transmit timestamp being generated at the time of transmission of the data packet by the packet match filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter. As

indicated below, arguments regarding these elements also apply to the other independent claims represented here.

In addition, it is submitted that the combination of references does not teach or suggest switching a connection of a physical layer (PHY) from a media access controller (MAC) to the snapshot register using a data switch and inserting the new transmit timestamp from the snapshot register into the timestamp field of the data packet in place of the original timestamp for the data packet; and switching the connection of the PHY back to the MAC to enable a remaining portion of the data packet.

Onvural regards the synchronization of local service clocks. The system utilized may be seen in, for example, Figure 6. The system described in the reference does not allow for real-time addition of a time stamp, which is demonstrated by the presence of a FIFO buffer 602 in the circuit. There is a time stamp detector 604, which detects a time stamp and provides it to a comparator 606. The comparator operates to compare time stamp with buffered local clock buffer, and which determines whether there is a different frequency. This may result in a modification of clock signal to adjust to the frequency difference. (*Onvural*, col. 8, line 56 to col. 9, line 19, and col. 4, lines 40-62 *Onvural* does not describe a system for the addition of a new transmit time stamp to a data packet, as provided in claim 1. Rather, it describes the generation of a timestamp in transmission, and the detection of a time stamp on reception to adjust a clock.

Kato describes data processing for a multi-channel digital television broadcasting system. The reference describes a Packet ID (PID) filter to filter certain codes in the headers of transport packets. The system further describes a time stamp generating unit 14 and a time stamp adding unit 15. However, these elements are not explained, and are

illustrated as boxes in Figure 27. The described system does not include a packet match filter to determine a protocol type of the data packet and a location of a timestamp field containing an original timestamp in the data packet, or generating a new transmit timestamp for the data packet in real-time at the time of transmission of the data packet by the packet match filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter.

Lorek regards a system to allegedly insert a time stamp into real time data. As described, the system includes a front end processor that receives a packet and generates a start of frame (SOF) pulse and a LENGTH field that corresponds to a length of the packet, and a time stamp generator that generates a time stamp. The system further utilizes a synchronizer that receives the LENGTH field and the SOF pulse from the front end processor and generates a control signal, and a multiplexer that inputs the packet from the front end processor, the control signal and the time stamp, and outputs a modified packet with a field in the packet replaced by the time stamp. However, it is submitted that the described system does not include a packet match filter to determine a protocol type of the data packet and a location of a timestamp field containing an original timestamp in the data packet, or generating a new transmit timestamp for the data packet in real-time at the time of transmission of the data packet by the packet match filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter.

It is further submitted the none of the references describe switching a connection of a physical layer (PHY) from a media access controller (MAC) to the snapshot register

using a data switch and inserting the new transmit timestamp from the snapshot register into the timestamp field of the data packet in place of the original timestamp for the data packet; and switching the connection of the PHY back to the MAC to enable a remaining portion of the data packet. None of the cited references appear to describe such a switching operation for transmission.

Thus, it is submitted that the combination of references do not teach or suggest the elements of claim 1, as amended. It is submitted that the initial arguments (regarding inspecting a data packet using a packet match filter to determine a protocol type of the data packet and a location of a timestamp field containing an original timestamp in the data packet, or generating a new transmit timestamp for the data packet in real-time, the new transmit timestamp being generated at the time of transmission of the data packet by the packet match filter triggering a snapshot register to take a snapshot of a transmitter timestamp counter) also apply generally to **independent claims 10, 20, 29, and 39** with regard to both transmission and reception of data packets. The additional arguments (regarding switching a connection of a physical layer (PHY) from a media access controller (MAC) to the snapshot register using a data switch and inserting the new timestamp from the snapshot register into the timestamp field of the data packet in place of an original timestamp for the data packet; and switching the connection of the PHY back to the MAC to enable a remaining portion of the data packet) also apply to independent claims 20 and 29. The remaining claims are dependent claims and are allowable as being dependent on the allowable base claims.

Conclusion

Applicant respectfully submits that the rejections have been overcome by the amendment and remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (503) 439-8778 if there remains any issue with allowance of the case.

Request for an Extension of Time if Needed

The Applicant respectfully petitions for a one-month extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a). Please charge any fee to our Deposit Account No. 02-2666.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: <u>November 24, 2008</u>   <u>/Mark C. Van Ness/</u>
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